PROGRESS

OF

MEDICAL SCIENCE.

MEDICINE.

UNDER THE CHARGE OF

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Bilateral Swelling of the Submaxillary Salivary Glands in Typhoid Fever, without Enlargement of the Parotids.—MILTON MILLER (*The University Medical Magazine*, July, 1899) reports a case with this unusual sequela on the twenty-seventh day of the disease, two days after normal temperature had been reached. The painful swelling of the left gland was succeeded in three to four days by a similar condition in the right. A rise of temperature to 102° was observed; resolution without suppuration took place, and in two weeks no swelling was visible.

Miller was able to find but one similar instance, Hoffmann (Leipzig, 1869) reporting a case ending in suppuration of the left submaxillary gland.

In the medical clinic at the Johns Hopkins Hospital suppuration of both glands was observed this year in a colored boy rather late in the disease; streptococci were the only organisms present.

The Role of the Meningococcus in Meningitis.—NETTER (*Societe de Biologie*, June 17, 1899), reporting twelve cases of cerebro-spinal meningitis in which the meningococcus or diplococcus intracellularis meningitidis was found, apparently still adheres to his views expressed in the *Twentieth Century Practice.* The accepted view of the epidemicity of the disease caused by this organism is not recognized by this observer. Chantemesse, opposing Netter, speaks for the recognition of the epidemic nature and specific character of the meningitides associated with meningitis. Netter's ideas that the meningococcus is a derivative and degenerate form of the pneumococcus seems to Chantmesse quite erroneous.

Griffon identifies one organism of Netter's "the streptococcus derived from the pneumonoccus" as the "streptococcus meningitidis of Bonome."

Etiology and Diagnosis of Cerebro-spinal Fever (*Lancet*, June 24th). In the Cavendish lecture for 1899, OSLER speaks of epidemic cerebro-spinal meningitis as a disease to be distinctly differentiated from other well-recognized primary and secondary meningitides. The epidemic features of the disease and its bacteriology are first discussed. Netter's rather remarkable and illogical conclusions are strongly objected to. In the diagnosis the sudden onset, the irregular style of fever, skin eruptions—herpetiform and petechial—leucocytosis, and arthritides are given prominence; the value of Kernig's sign in the recognition of meningitis and the great diagnostic worth of Quincke's lumbar puncture are considered; no distinct therapeutic results are ascribed to the latter.

In thirteen of fourteen cases in which lumbar puncture was performed at the Johns Hopkins Hospital the specific organism was demonstrated; large amounts of turbid or bloody fluid were frequently obtained—as much as 126 c.c. on one occasion. At times clear fluid may be found.

Sporadic meningitides, according to Osler, may be due to the meningococcus or to the diplococcus pneumonia, which may be a primary or secondary infecting agent.

Morphine, ice-sponging, frequent lumbar punctures whenever symptoms of pressure from accumulation of fluid appeared, formed the main line of treatment. Laminectomy and draining of the cord were undertaken in two cases in Dr. Osler's wards with no very marked results.

Pleurisies Due to the Bacillus Eberth.—Pleurisies caused by the typhoid bacillus may be serous or hemorrhagic, but according to Labiche are most often purulent, occurring most frequently during convalescence; they may exist independently of lesions in the lungs, although bronchopneumonia and bronchitis frequently precede. The physical signs are those of most pleurisies; the temperature is not to be considered as a guide to the local condition, pleural and hemorrhagic pleurisies existing with little or no fever. These typhoid pleurisies may be of quite long duration—in one case eighty days; they may resolve, or thoracentesis or an operation for empyema may be necessary.

LABICHE considers the prognosis serious, and advises frequent exploratory punctures, in order to observe the nature of the fluid. The cold bath has no share in the production of the pleurisy, and is not contraindicated should pleurisy develop; ultimate resolution depends upon general amelioration of the patient's condition. Operation or thoracentesis are only to be resorted to should the symptoms become intensified, since even purulent exudate may completely resolve.—*Gazette Hebdom.*, 1899, No. 17.

Acute Myocarditis.—RENAUT describes acute myocarditis produced experimentally in animals by inoculation of toxins of diphtheria, as showing, first, granular degeneration of the cardiac muscle cell with disappearance of the transverse striation and a colloidal-like transformation of the smooth, muscular coat of the smaller arteries. Subsequent lesions are seen as areas of disintegration and vacuolization of the heart muscle fibres, and slight infiltration of the connective tissue. The process, as a whole, may be called an acute parenchymatous myocarditis. Myocarditis, due to diphtheria toxin, in the human subject is practically identical with the experimental disease; the myocarditis in typhoid fever is of a much less severe type; that seen in pneumonia resembling closely that of typhoid, but shows no "congestive œdema" of the myocardium. In all the same alterations of the small arteries is seen. Either the toxins of these organisms or the presence of the organisms themselves may be responsible for the changes found, the Eberth bacillus and the pneumococcus having been frequently found in lesions. The symptomatology of the development of myocarditides is very similar in all; at onset there may be seen a short period of cardiac excitation, rapid, strong pulse, of good tension, and strong pericardial shock; then ensues a gradual weakening of pulse, with loss of tension, and a vague undulation in place of previous cardiac shock, tachycardia and other disturbances of rhythm being associated. Myocardial lesions which are exclusively parenchymatous have no distinct clinical history; the interstitial affections, according to Renaut, have a "fine and definite symptomatology"; these develop always in convalescence, usually when the first movements are made. Extreme weakness, often vomiting and diarrhœa, and, on the part of the heart, tachycardia and arrythmia are seen, disappearing if the process does not become more marked, but in the event of its aggravation a true acute asystole may occur.

Suppurative myocarditis may resemble ulcerative endocarditis in its symptomatology, with its embolic and general phenomena; intense præcordial pain may be present, radiating to back and abdomen; syncopal tendencies occur.

Renaut also describes a parenchymatous acute myocarditis of infants, differing greatly from other forms. This form is an acute or subacute myocarditis, developing in the course of rheumatism, erysipelas, or typhoid, especially in children already the subjects of valvular disease. Suddenly, in the course or termination of the disease, signs of myocardial weakness appear, but therewith no arrythmia, no "bruit de galop"; though usually fatal, there may exist a less severe, curable form.

Whether complete resolution of an acute myocarditis can take place seems doubtful; in animals one and two years after experimental inoculations, distinct evidences of former trouble could be made out.

Diagnosis rests upon the previously mentioned symptoms; treatment should be to quiet the preliminary excitation, if present, to sustain the heart and to relieve arterial tension.—*Presse Med.*, July 29, 1899.

Osteo-arthritis of the Spine; Spondylitis Deformans.—GOLDTHWAIT, reviewing the literature on this subject, and reporting ten cases with illustrations, insists first upon differentiating spondylitis deformans from other types of rheumatoid disease, chronic in character and leading to joint ankylosis, but in which there is atrophy of all the joint structures, with no tendency to nodular growth or caseous deposit.

Spondylitis deformans is a disease of adult age, not necessarily old age, some cases developing in late adolescence; its etiology is not clear; gonorrhœa is given by some as the probable cause; in a majority of cases a history of exposure is found.

Goldthwait refers to Bland Sutton's observations illustrating the disease in an Egyptian mummy, and to Sutton's reports of the same disease in cattle, as evidence of its long standing and wide distribution. The pathology of the disease consists in nodular enlargement of the edges of the articular cartilages, with subsequent ossification of the nodes and extension of the process into the ligaments adjoining. With the hypertrophy at the edges of the cartilages there is atrophy of their centres or areas of pressure.

In the spine the process usually begins at one side anteriorly, and extends up or down along the anterior lateral ligament; it may remain localized here, or may spread up, down, or across. With the progression of the disease the intervertebral substances atrophy, causing often the rounding of the back; if the vertebræ are ankylosed before complete atrophy of the intervertebral disk, a straight back may remain.

Similar changes take place about the transverse and occasionally the spinous processes, giving rise to the symptoms of paralysis or disturbed sensation by narrowing the various foramina.

In proportion to the changes found, the clinical symptoms are slight; pain in the back, stiffness, rigidity, limitation of movement being chiefly complained of. In the event of the ribs becoming involved, the thorax becomes fixed, and respiration may be entirely diaphragmatic.

The diagnosis of Pott's disease may be difficult in the early stages, particularly if there is prominence of the affected part, neuralgic pains, disturbances of sensation, and paralysis may be present, resulting from pressure; rarely are the two sides of the body, however, affected alike, differing thus from Pott's disease; the paralysis is also peripheral in type—not central, as is usual in the latter disease. The resulting deformity has a wide range of variation; lateral deformity is rare.

Treatment should be nourishing and strengthening. The ordinary rheumatic remedies are to be avoided. Stimulation, bathing, electricity, and massage may give relief, and some mechanical supports prevent progressive deformity.—*Boston Medical and Surgical Journal*, August 10, 1899.

Characteristics of Blood-serum in Certain Varieties of Purpura Hemorrhagica (*Societe de Biologie*, July 1). In five cases of purpura, including purpura hemorrhagica, rheumatic purpura, and purpura occurring in cancer and tuberculosis, SICARD makes the following observations: "Coagulation of the blood taken from veins in large quantities (10 to 15 c.cm.) occurred within normal limits; on the other hand, the retraction of the clot and exudation of serum took place with the blood of one case only—the blood of the tuberculous patient with purpura—the other specimen of blood producing but ten to twelve drops of serum.

"Of more importance and interest is the fact that this serum exuded in such small quantities has not the power of rendering coagulable a liquid not spontaneously coagulable, as, for example, certain hydrocele fluids. Normal sera added to such fluids in proportion of 1 to 80 will, according to Sicard, induce coagulation in four to six hours. The sera of two cases of purpura hemorrhagica were absolutely devoid of this quality; that of rheumatic purpura and cachectic purpura showed minute traces, while the serum of the tuberculous case reacted like normal sera.

"Calcium chloride in minute quantities added to the blood of the purpura hemorrhagica cases produced rapid retraction of the clot and sera, which showed reaction of normal serum in a more or less complete fashion."

Sicard suggests that in the serum of certain purpuras the fibrin ferment, or its zymogen, is not present in sufficient quantity to cause more than simple coagulation of the blood. The subsequent retraction of the clots may be due to another variety of fibrin, the zymogen of which is absent in purpura.

The Symptomatology of Tumors Involving the Hypophysis Cerebri.—STEWART (*Montreal Medical Journal*, June, 1899), in introducing this subject, remarks that there are on record a number of cases of tumors involving the destruction of the hypophysis where no symptoms of acromegaly were present. Stewart presents two cases, in one of which the symptoms were those of a rapid, infiltrating neoplasm of the anterior part of the base of the brain. In the second, in addition to signs of direct cerebral pressure, there were symptoms suggesting pernicious anæmia and myxœdema.

The first case was admitted complaining of dimness of vision, headache in temporal and parietal regions, and occasional vomiting. On examination the outer half of the field of vision in the right eye was gone. Light perception was reduced in both eyes, and simple atrophy of both nerves was found; the optic atrophy progressed. The urine contained albumin and casts. Death occurred in a month. After development of continuous headache and later stupor, a bloody discharge from the anterior and posterior nares was observed during the last few days. At autopsy the sella turcica was found occupied by a lobulated tumor mass, 5 cm. by 4.75 cm. No trace of pituitary body was to be seen. The tumor had eroded the body of the sphenoid, and on the left side passed along the lesser wing of the sphenoid to the back of the orbit; it was pressing upon and had flattened the optic commissure. The pathological report classifies the tumor as a perithelial angiosarcoma of the pituitary body. Extensive degeneration of the optic nerves was found. There were cirrhotic changes in the kidneys, uterus, and ovaries, to which changes, in connection with hypophyseal growth, Stewart calls special attention. During life there were no symptoms of acromegaly or of anæmia.

In the second case, a man of forty-two years came under observation complaining of failing vision and headache; there had been vomiting of cerebral character some time previous. The patient had giddy sensations and tendency to fall forward.

On examination no perception of light was found in the left eye; the pupil was immobile, but reacted on stimulation of the right eye with light. In the right eye complete blindness to the outer side of the field; inner side amblyotic. Both optic disks were affected, the left showing white atrophy, the right being merely pale.

There were no objective disturbances of sensation or motion; the patient complained, however, of numbness of the hands and profuse perspiration about the head and neck. The subsequent course of the case was very slow; sight failed completely in a year and a half; the patient became very fat and anæmic; the face and extremities were puffy, but would not pit on pressure, resembling myxœdema. Four years from the date of the first observation the condition resembled pernicious anæmia, the blood-count being as low as 2,100,000, and a typical lemon tint had developed in the skin. Slow cerebration; hallucinations of sight, smell, and hearing developed in the next two years, and after six years of the above symptoms the patient died.

Tumor of the optic chiasm was diagnosed. Autopsy showed a large tumor of the pituitary body, extending more to the left than to the right; the surrounding bones were atrophied. Histologically the tumor was endothelioma. The thyroid was normal.

The combination of the myxœdematous condition and pallor of the skin in connection with the pituitary tumor are emphasized by Stewart.

Pechkranz, of Warsaw, in a case of sarcoma of the pituitary, mentions as a prominent feature a myxœdematous condition of the patient, considering it identical with pachacria mollis of Arnold.

Anders reports a case of hemorrhagic tumor of the pituitary and infundibulum in a case of pernicious anæmia, with symptoms of giddiness, headache, nausea, loss of consciousness, and delirium.

Notes on Two Hundred and Fifteen Cases of Typhoid Fever.—BOSANQUET'S (*British Medical Journal*, July 18, 1899) reports show that in the eight years from 1890 to 1898 the last four months of the year brought in 150 cases, there being 47 in October alone.

Onset with definite rigor was recorded in 5 cases; in 2 convulsions ushered in the attack; troublesome diarrhœa and obstinate vomiting were met with in 22 and 15 cases, respectively.

In 42 instances the spleen was palpable; hemorrhage from the bowel occurred in 21 cases (once as late as the fifty-seventh day of the disease); 12 cases in which perforation was seen ended fatally. Ten cases were complicated with pneumonia; 3 with pleurisy, acute nephritis, and arthritis, respectively. Under affections of the nervous system 2 cases of peripheral neuritis (paralysis and foot-drop) developed late in the illness. Among cardio-vascular accidents are mentioned 6 cases of thrombosis of the femoral vein—one of the pulmonary artery and one instance of embolus of the right iliac artery, causing fatal gangrene of the leg; cerebral meningitis was found in one fatal case. Sixty-eight per cent. of the cases showed typical roseola. In one case urticarial wheals were present.

Relapses occurred in 59 cases, once after twenty-six days of apyrexia; periostitis was met with as a sequela in three instances, once, however, on the twenty-fourth day. Forty cases ended fatally, a mortality of 18.5 per cent. There were 14 deaths from perforation, 3 of which were multiple; one perforation was of the large intestine. In 21 instances lesions were present in large intestines, extending to the rectum in 3, and affecting the appendix in the same number of cases. One instance each of ulcer in the larynx and in the stomach is recorded.

The Brand method was not employed in treatment, sponging and occasional antipyretics taking its place. Antityphoid serum had no effect in a few cases to whom it was administered.

Typhoid Infection without Intestinal Lesions.—LARTIGAU (*New York Medical Journal*, July 29, 1899) reports two cases proving at autopsy to be general infections with the typhoid organism, though without any traces of intestinal lesions.

The first case, after two weeks' illness, showed a moderately high temperature, with cough and shortness of breath; six days after admission the patient had a series of convulsions, with retraction of the neck and dilatation of the pupils, and during the night a chill, death ensuing shortly after. At autopsy, in addition to a pyocyaneus bronchopneumonia, there were red and white infarctions in the liver and kidneys. Lymphomata could be demonstrated in the liver and cloudy swelling of the cells. From the liver, gall-bladder, kidney, and urine typhoid bacilli were isolated in pure cultures. The patient's blood after death gave a distinct Widal reaction.

In the second case death ensued three days after an operation for ectopic pregnancy; the autopsy showed an acute splenic tumor, cloudy swelling of the liver and kidneys, and endometritis; operation wound clean and sterile. Typhoid bacilli were isolated from the liver, gall-bladder, and kidneys; typhoid bacilli and streptococcus from the uterus; pneumococci from heart blood and spleen. Blood post-mortem gave distinct Widal reaction. No intestinal lesions were to be seen, nor were changes in the mesenteric or retro-peritoneal glands made out. It can be objected that in the patient's history there is mention of a three weeks' febrile attack, occurring four months previously. The author considers the wide dissemination of the organisms and their unusual localization to indicate a more recent infection. A very interesting feature in this case is the polybacterial infection present—typhoid, streptococcus, and diplococcus apparently all playing a part.

Etiology of Malarial Fever.—THIN refers to the already well-known researches of Ross and Manson on the theory of inoculation by mosquitoes, and to Grasse's experiments in 1898, which apparently limit the power of inoculation to certain genera of mosquitoes. Bignami's experiments, at first negative, later positive, when the particular "genus" was allowed to bite the subject, are to THIN very conclusive. Bignami's and Bastianelli's results allow them to conclude positively that "the 'genus' of mosquito, *anopheles claviger*, may be made to bite a subject suffering from malarial fever, and then, if kept at the proper temperature (30° C.) for the number of days requisite for the development of the sporozoites, may inoculate healthy patients by this bite. These patients will develop malaria, usually within a certain time, the parasite being the same as was present in the first instance."

According to GRASSI, BIGNAMI, and BASTIANELLI, the temperature at which the mosquito host is kept influences materially the development of the parasite. In mosquito bodies kept at 15° C. after biting no development occurs, the most favorable temperature being from 20° to 30° C. When crescents have been taken up by the mosquito they remain almost unaltered for some hours: at forty hours a distinct nucleus can be made out, with central chromatin and the protoplasm is vacuolated; after six days the large swollen parasites are seen in the thickness of the middle intestine bulging into the lumen, and are found to be composed of a number of small bodies, sporoblasts, which, becoming sporozoites, burst from the capsule into the intestine and are distributed throughout the mosquito body, being found in great numbers in the tubes of the salivary glands. In tertian fever the mature non-sporulating forms develop in the anopheles; some slight differences from the subsequent developmental processes of the crescents are to be made out, and Bignami and Bastianelli describe a female form, "malthrogameti," and a male, "mithrogameti." The observers were unable to show that the mosquitoes transmitted the sporozoites to their offspring, experiments in this line being negative.

Other spore-like bodies are to be seen in mosquito bodies, the nature of which is as yet undetermined.—*Philadelphia Medical Journal*, August 12, 1899.

SURGERY.

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The Formation of a Cleido-humeral Nearthrosis.—OLLIER (*Rev. de Chir.*, July 10, 1899) reports in detail the results of an operation which he had previously mentioned in a communication to the Académie des Sciences. The patient had received an injury in the battle of Metz, which had necessitated the removal at various times of different parts of the scapula and the upper portion of the humerus. He was left with a defective shoulder, which prevented any use of the arm, although the forearm muscles were intact and functionally capable; the upper arm had no point of fixation, and the arm was consequently helpless. The only bony point to which it could in any possibility be attached was the end of the clavicle, from which the proximal end of the humerus was separated by a distance of 7 cm., which was filled up by dense cicatrices. Various forms of apparatus had been tried without success, and operation was demanded. He resected a piece from the end of the humerus subperiosteally, and attached it by two silver-wire sutures to the freshened end of the clavicle, uniting the periosteum by catgut sutures, and attaching such of the tendons to the humerus as were available of those forming the shoulder-joint and springing from the scapula. A portion of the deltoid remained attached to the clavicle, though somewhat atrophied; the remainder, that could be separated from the cicatricial tissue, was attached to the trapezius muscle and other portions to the fibrous tissue surrounding the extremity of the clavicle, thus forming a digastric muscle. The dressing applied was occlusive and the healing rapid; the arm was, however, kept in a fixed position, with the idea of obtaining bony union. It was apparent that this was not practical without the loss of the muscular development of the arm, and the dressing was therefore arranged so that the muscular stimulation could be applied to the deltoid and other muscles surrounding the shoulder. When it was seen that bony union was not probable, passive motion was employed and the arm dressed, so that the forearm muscles could be exercised. There was thus formed a fibrous union between the bones which permitted considerable motion. The silver suture could not be felt, as plastic exudate had covered it over. There was, of course, a considerable shortening in the upper arm, but the patient at the end of six months could carry a weight of 40 kgs., and flex the forearm with a weight of from 12 to 15 kgs. The condition continued to improve till the arm could be abducted to a right angle with the body and he could lift a weight of 57 kgs. from the ground without any apparent separation of the new joint.

There was complete tolerance of the silver sutures, which never produced any irritation. One of them, however, tore out. The radiographic examination was very instructive. The head of the humerus, which had been rarefied in its structure, was shown to have thickened. While one of the silver sutures had been torn out, the other apparently did not serve to hold the bones together, but only acted as a point about which the bone moved. The movement of abduction showed that the inner silver wire had torn out of the humerus. No true articular cavity could be detected, and the joint was probably entirely fibrous in its structure.

This operation is indicated only when there has been total loss of the scapula and a portion of the humerus. Where a typical resection can be made subperiosteally, there forms in young subjects sufficient new bone for the strengthening of the joint and the preservation of its functional usefulness. In older subjects, although new bone may not form if the periosteum can be preserved and the attachments of the muscles to it, the fibrous tissue formed will be sufficient to secure a useful arm. The important feature in all such resections is to maintain the integrity of fibrous tissue, uniting the various groups of muscles that form the power of the joint and enter into the formation of the articulation.

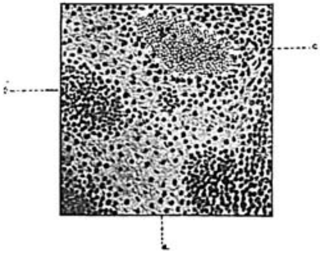
Nerve Complications in Fractures of the Lower End of the Humerus. —BROCA and MOUCHET (*Rev. de Chir.*, June 10, 1899) find that there are a number of causes which can account for injuries of the nerves in this region. They divide them into primary and secondary groups. These groups are according to the etiology and treatment required. There is also a third class, which is made up of injuries that are manifested only at a remote period after the injury is sustained.

The primary injuries are complete section of the newer partial or complete tears; stretching by a dislocated fragment of bone; a fragment completely detached may press upon and injure the nerve; it may become impacted between the fragments. The most frequent source of this class of injuries is a contusion. It may have any degree, may produce permanent paralysis, with an ascending neuritis as a complication, in spite of the most skilful surgical intervention. The ulnar nerve, on account of its superficial situation, is most liable to these injuries, and when this nerve suffers injury it is more liable to be caused by a contusion than by the fracture which has taken place near it. It is well to remember that these serious nerve injuries may take place after a very simple injury of the elbow, where such complications are not suspected. The paralysis does not always become evident at the time of the fracture, and may not show itself till the week following. It may not appear till after the nerve has been enveloped by callus, the two causes acting together to produce the injury.

mammary and axillary glands. Although slightly fibrous in character, it most resembles a lymphatic structure.

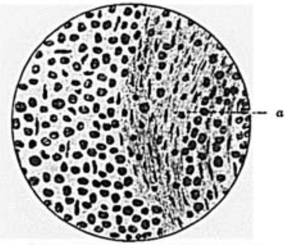
Histology. Spleen: The majority of the Malpighian corpuscles show only slight alterations. Many appear normal; others present a slight increase in the reticular tissue, and now and then a Malpighian body is found which shows considerable sclerosis. No marked degenerative changes are to be seen in the cells. The veins show a moderate increase in the connective tissue which surrounds them; areas are found where this increase is very marked. Fibrous tissues extend some distance into the splenic pulp, enclosing within its meshes lymphoidal cells, isolated and in groups (see Fig. 1). In many places the pulp appears normal; however, in general it is apparent that the reticulum is considerably increased. Now and then are to be found areas of marked sclerosis containing lymphoidal cells in the meshes of the fibrous tissue (see Fig. 2). Nowhere in the spleen are signs of acute inflammation

FIG. 1.



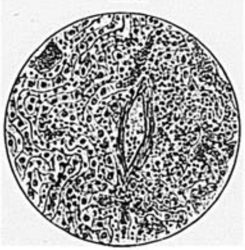
a. Connective tissue invading pulp. *b.* Group of lymphoidal cells surrounded by connective tissue. *c.* Splenic vein.

FIG. 2.



Splenic pulp, showing area in which the reticulum is fibrous. *a.* Lymphoidal cells.

FIG. 3.



Liver.